**NOTES FROM BOULDER MEETING – January 11-12, 2004**
**Issues relevant to deploying NOAA instruments in Alert in the Summer of 2004**

**MOU and framework of collaboration will dictate certain operational and set up procedures; need to finalize ASAP. Also a mechanism for transferring funds needs to be established.**

- There is an existing MSC-NOAA MOU for which a suitable annex could be written. At what level will the MOU be signed? ACTION ITEM: BRUCE AND TANEIL WILL WRITE ANNEX

- The MSC-NOAA MOU needs to be reviewed by NOAA MOU attorneys. ACTION ITEM: TANEIL WILL CONTACT NOAA ATTOURNEYS

- All funds will probably be transferred from NOAA to MSC, even for work completed by the Canadian Forces personnel who already have a billing arrangement through MSC.

**For the radiation instrument suite how will footings/anchors, guys, for walk up and albedo rack be handled?**

- Labor will be charged at $68 CN/ hour. A conservative estimate would be $5000 cn to install proper footings, pads and guys.
- ACTION ITEM: Bruce will talk to Brian Howe to get suggestions.
- ACTION ITEM: Specific footing plans and approximate location request will be submitted by January 31st.
- Plan on having CMDL personnel (Jim Wendell and Bruce McArthur and Bob Stone + on site MSC technicians) on site visit during a Aug 5 – Aug 20 installation. Will specify exact site for albedo at beginning of installation with the intention to deploy at the end of the 2-week period.
- Possible second staging in September if necessary.
- For expansion purposes, will double the size of the walkup.
- Will simultaneously install the CN counter.
- Scaffold and walkup parts need to be shipped by May
- CMDL plans on taking ALL installation materials and tools. (example: Trinidad Head and Burmuda).

**Site Issues**

- Andrew will acquire GS fix on GAW, tower, SST.

**What are shipping costs, restriction, custom concerns, routing, lead time, possible delays?**

- ACTION ITEM: A total shipping orders needs to be submitted by February 15th.
- Equipment will be delivered to Trenton, the sooner the better.
- Large items will be sea-lifted

- Smaller items will be air-lifted
- ETL will submit a manifest to William Rutherford (MSC shipping agent) who will take care of customs.

- Preliminary Size/Weight estimates

BSRN - 6 ft high x 4 ft pallet (1000 lbs)
Radar Antenna – 6 ft high on 7 ft pallet (500 lbs with crate)
Radar electronics – Two 200 lb crates
GSR – 80x43x57 with trolley removed – 700 pounds.

**Personnel transportation**

- There are issues with reliability of military transportation to Alert
- Military will always take priority
- Cost effective ($800 CN RT) from Trenton
- Commercial + charter options may exist (Military may contract with commercial airline)
- ACTION ITEM: Andrew will keep us posted on anticipated frequency and modes of transportation)

**On-Site Personnel Costs**

- $47 CN/ day for room and board

**Infrastructure costs**

- $80,000 CN/year for heating GAW
- $25,000 CN/year for heating SST, less if partitioned off
- Additional for internet and phone access
- Engineering modifications to the GAW building

**SECURITY**

- At present, they are suddenly and expectedly enforcing a policy which precludes non-Canadian civilians on site for science activities. Andrew is working on this problem.

**Infrastructure Requests for Radiation Suite**

- 2 15-amp circuits.
- Space inside GAW for computer doing data interrogation/monitoring
- Space on site for computer doing data quality checks
- All sky camera will require separate computer
- Power runs will be through armored cable to be brought on site by NOAA
- Desirable to have onsite capabilities for calibration and data generation

.

- Modem or phone line from GAW and main station for voice communication
- *Tap into MD9 network*

- *Data streams will go to MSC for calibration and generation of values.*
- *MD9 and CR10 and PC208 and loggernet will allow transfer of data to a PC and that can be zipped and ftped to Downsville every 6 hours*

**NOTE: After completion of this meeting a number of issues were raised related to the final 3 bullets dissemination and transfer of data. These are still being discussed.**

**Bandwidth**

- Radiation suite – "insignificant"
- All sky camera (picture every 5 min) - 60K/min (86 Mb/day?)- not to be installed in 2004.
- Radar – 150 Mb/day (moments), 5 GB/day (spectra)
- GSR – 10-20 Kb/sec (35-70 Mb/day?)

**Contacts**

- Celine Audette will be the military contact until end of June (probably extended). All communications with military should go through her. When we are on site, we can talk directly to the head of sections (SCEO – Station Construction Engineering Officer) or the on-site MSC head.

**Transfer of funds/Cost Estimates**

- Charges from military will be made to MSC who will pass them on to NOAA
- Senior Tech/Junior Scientist cost is $70,000 CN/year salary + $1243 CN/month + $154 CN/month + 2 RT/year (Call it $100,000 CN/year)
- Note: The present techs are under-employed, so we could pick up costs but not require adding an extra tech. Present situation is one-timers for 1 year. Possibility that more advanced needs would require a 4 month rotation of 3 repeating individuals to develop experience.

**Other Topics**

- Data sharing; data priority concerns; protocol for (restricted) use of data

- Collaboration policies. Establish an MSC and NOAA mentor for each data set. Mentors will develop policy on data release and archiving.

- What is the expectation of access now and in the future with regard to the clean air sector; walk, electric vehicle access; need for routine inspections; minimal frequency

- The science; MSC-NOAA collaboration and joint projects/publications; ideas for one year milestone and for the IPY

- What happens when/if GAW building is removed; container?

- protocol for data QA, submission to BSRN; who and at what cost MSC for BSRN